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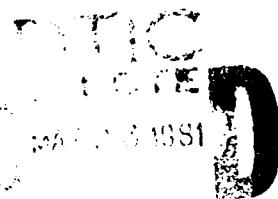
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① **SOVIET NUCLEAR PROLIFERATION POLICY**

by

⑩ Joseph L. Nogee

① 5 Aug 1980

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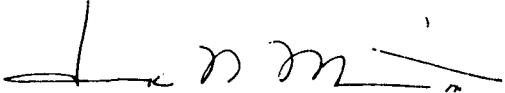
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## FOREWORD

This memorandum considers the rationale behind the Soviet Union's behavior with regard to nuclear proliferation, relating its changing nuclear policies to the larger context of strategic perceptions, interests and foreign policy priorities. The author contends that Soviet accession to the Nonproliferation Treaty marked an important commitment to that goal; however, other objectives continue to have a higher priority. He examines three basic strategies toward achieving a nonproliferation regime (legal, political and technical) and describes the extent to which the Soviet Union relies upon each. One of the author's conclusions is that like many Western powers (not including the United States), the Soviet Union is prepared to sacrifice nonproliferation to meet its anticipated future energy needs.

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JACK N. MERRITT  
Major General, USA  
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## **SOVIET NUCLEAR PROLIFERATION POLICY**

The issue of nuclear proliferation has been on the foreign policy agenda of the superpowers since the beginning of the atomic age. Both the Soviet Union and the United States have over the years pursued a variety of strategies to stop the spread of the bomb. In recent years the problem has acquired greater urgency because of the global spread of nuclear technology for peaceful purposes. While the Carter administration has taken bold (some would say inadvisable') measures to cope with the problem, the Soviet Union has moved slowly. The hesitation and contradictions in Soviet nuclear proliferation policy raise the question of how seriously the Kremlin takes the problem of nuclear proliferation.

The Soviet government claims with a great deal of justification that it opposes and has long opposed the spread of nuclear weapons. When the issue was first introduced before the United States in 1958 in the form of the Irish resolution the Soviets were quick to endorse the idea. We know, moreover, that non-proliferation was one of the purposes behind Soviet interest in a nuclear test ban during the 1950's. Nikita Khrushchev wrote to Chou En-Lai on April 4, 1958 justifying a Soviet decision to suspend atomic testing with the argument that "If the tests are not

terminated now, other countries may develop nuclear weapons within a certain space of time . . . ."<sup>2</sup> Today there is no more ardent advocate of the Non-Proliferation Treaty than Moscow. One analyst of Soviet policy wrote recently "The Soviet Union has been considerably more consistent and effective than the United States promoting policies to prevent nuclear spread."<sup>3</sup> Many see the Soviet Union today as a conservative world power which genuinely fears the political and military consequences of nuclear diffusion.

And yet clearly Soviet behavior has not always worked against the spread of these weapons. To begin with, the Soviet Union directly helped a nonnuclear-weapons state acquire the bomb. Though Soviet nuclear assistance to China was abruptly terminated in 1959, no one doubts that Peking relied heavily upon that assistance to detonate its own explosion. Other policies at variance with the Soviet image as a strict nonproliferant are: its initial opposition to the creation of the International Atomic Energy Agency (IAEA); its one-time efforts to weaken IAEA controls; its footdragging on the Non-Proliferation Treaty; the failure of the Soviet Union to condemn India's nuclear explosion; its support of peaceful nuclear explosions; its encouragement of the fast-breeder reactor and the development of a plutonium economy; its baiting of South Africa and Israel; its refusal to accept international inspection for its own peaceful nuclear facilities; and its unwillingness to substantially reduce its own nuclear stockpile. Many of these actions are justifiable on other grounds, but they are hardly compatible with stopping the spread of nuclear weapons.

What can one make of this record? A general survey of Soviet nonproliferation policy reveals a history of inconsistencies and contradictions.<sup>4</sup> The Kremlin has at times completely reversed itself on proliferation issues. It has applied different standards to different countries as well as different standards for itself and other countries. Some proliferators have been viewed as more menacing than others. Some of Moscow's rhetoric has evidently been designed for propaganda only, though not infrequently Moscow intended its words to be taken at face value. As to the substance of Moscow's proposals, they have ranged from the impractical to the realistic.

There is a rationale behind Soviet behavior. It should not be surprising to find fluctuations and contradictions in Soviet nuclear proliferation policy, for, after all, these features have characterized virtually all aspects of Soviet foreign policy (and not just Soviet

polices). One must remember that nonproliferation is only one of the Kremlin's foreign policy objectives and never the primary one. When we examine proliferation policy in the context of other issues, we find a greater consistency and continuity than otherwise. Sometimes the effort to stop the spread of nuclear weapons was fully compatible with larger Soviet goals, such as Moscow's campaign to prevent the Federal Republic of Germany (FRG) from acquiring the bomb or even getting a finger on the trigger. In other cases, such as the desire to increase its energy base with the use of plutonium, for example, there are incompatibilities. Soviet perception of the proliferation threat, then, is conditioned by the larger context of strategic perceptions, interests and priorities.<sup>1</sup>

As might be expected, Soviet policy toward the proliferation of nuclear weapons evolved and was modified to fit the changing environment of Soviet foreign policy. In broad terms, it can be divided into three general periods: the first includes the 1940's and the 1950's, from the discovery of the bomb until the schism with China; the second covers the 1960's when the Kremlin focused on the dangers posed by the possibility of German (FRG) and the reality of Chinese acquisition of nuclear weapons; in the 1970's, the Soviets moved closer to the United States in its perception of the requirements for a general nonproliferation regime.

During the first period, covering the postwar Stalin, Malenkov and early Khrushchev administrations, Soviet concern with proliferation was only incidental to the larger problem of countering the nuclear superiority of the United States. Some Soviet proposals during this period, e.g., a complete ban on nuclear weapons and later a halt to nuclear weapons tests—were related to stopping nuclear expansion by their chief adversary. In a word, nuclear diplomacy in the decade and a half after the war was largely a propaganda battle.<sup>2</sup>

During this period the Soviet Union had not yet formulated a clear-cut strategy regarding proliferation. Nowhere was Soviet uncertainty more evident than in the almost three years of negotiations over the Statute of the International Atomic Energy Agency (IAEA). The IAEA was the outgrowth of the atoms-for-peace proposal made by President Eisenhower before the United Nations General Assembly in December 1953. Throughout 1954 the United States repeatedly proposed to the Soviets that negotiations begin for an international agency, and repeatedly the Soviet Union rejected the idea. Soviet Foreign Minister V. M. Molotov insisted

that the peaceful development of atomic energy had to await a solution to the problem of disarmament, including a prohibition on the use of nuclear weapons. In other words, the peaceful development of atomic energy was held hostage to the hoary Soviet demand to ban the bomb.<sup>7</sup> Eventually the United States decided to proceed without the Soviet Union and invited seven other "atomic powers" to meet in Washington to draft an international statute. On September 22, 1954 the Soviet Union completely reversed itself and indicated its willingness to participate in the eight-power (later enlarged to 12) negotiations. Moscow saw that with or without its participation a new organization was emerging and obviously felt that its interests would be better served by being in rather than out.

This tendency to shift position characterized Soviet behavior throughout the negotiations. For example, the thorniest issue involving the Agency's structure was the composition of the Board of Governors. The so-called atomic powers wanted a privileged and permanent position on the Board while the "atomic have-nots" wanted a larger and more geographically representative Board. At one stage in the negotiations the Soviet Union voted with the atomic have-nots (presumably to curry favor with the underdeveloped nations led by India) but later reversed itself and voted with the atomic powers (to enhance its own position as an atomic power). This ambivalent behavior was a result of its dual role as an atomic power and a self-appointed champion of the underdeveloped nations.

The question of controls illustrates an issue where the Soviets started out supporting the atomic powers who wanted stringent safeguards and ended up in the camp of the underdeveloped countries who wanted weak controls. In the general conference where the Statute was ultimately adopted, G.N. Zarubin, the Soviet delegate, argued:

The Agency should impose upon no country control that might infringe upon its sovereign rights. It is necessary to note that the agreement on the peaceful utilization of atomic energy concluded between the Soviet Union and other countries does not contain any conditions which might infringe upon the sovereign rights of countries participating therein. The Soviet Union considers that a sufficient guarantee is to provide in the draft statute that countries must be obligated not to make use of the assistance which they receive from the Agency for the production of atomic weapons, and must submit reports with respect to the assistance received.<sup>8</sup>

Years later the Soviet Union would again reverse itself to become a staunch advocate for IAEA controls.

At the same time that the Soviet Union was resisting controls in the newly established IAEA it was practicing what it preached in its own backyard. In January 1955, the Council of Ministers resolved to provide atomic assistance to governments friendly to the Soviet Union. This decision led to a program of technical assistance to China and several of the Socialist bloc countries of Eastern Europe. There is some question concerning the aid actually rendered by Moscow to China, though it apparently included a 6.5 megawatt nuclear reactor and a gaseous-diffusion uranium enrichment plant.<sup>9</sup> No effort was made by Moscow to apply safeguards over these facilities to prevent their being used for military purposes. Khrushchev presumably assumed that the Chinese (or any Soviet aid recipient) would never build a weapon without consulting the Kremlin. It undoubtedly came as a shock to the Russians when the Chinese announced in 1958 their intentions to produce their own nuclear weapons.

Chinese behavior in 1958 had a profound effect upon Soviet proliferation policy both toward its Socialist allies and subsequently toward its beneficiaries.<sup>10</sup> All atomic assistance to China was suspended between the summers of 1958 and then terminated completely. In Eastern Europe there was a short-term decline in the amount of nuclear technical assistance given, coupled with the long-term inauguration of safeguards as a protection against any future shocks such as had come from the east.

Perhaps equally or more shocking to Khrushchev was the Taiwan Straits crisis triggered by China in the summer of 1958. Mao Tsetung, depreciating the dangers of a nuclear war, embarked upon a policy of militancy toward the United States in an attempt to wrest the offshore island of Quemoy from Taiwan. As Benjamin Lambeth describes it, "the Soviets were rudely awakened to the onerous possibility that in some future crisis, in which China possessed its own atomic bombs, the way out might not be so easy, and Moscow might then be dragged into a catalytic nuclear confrontation with the United States because of some irresponsibility on the part of its allies in Peking."<sup>11</sup> The rift with China, reflected in and influenced by this crisis, was a major factor in the evolution of Soviet nuclear policy.

In the second period under review, nonproliferation moved up in the hierarchy of Soviet objectives. What had earlier seemed a

possibility in the decade of the 1960's became a reality. France joined the nuclear weapons states in 1960, followed by the People's Republic of China in October 1964. By the beginning of the 1960's, an expansion of the nuclear club from three to five was inevitable; it was only a question of time. Of more direct concern to the Soviet Union now was the threat of a nuclear-armed Germany. There was no inevitability here, and the Soviets were determined to do everything in their power to keep it from becoming a reality.

The first major step toward stopping the spread of nuclear weapons came with the signing of the Nuclear Test Ban Treaty in 1963. This treaty was possible because of the significant change in US-Soviet relations that followed the Cuban missile crisis in October 1962. It was a clear signal of a common interest not only in inhibiting the dissemination of atomic weapons but in building the framework for a more stable international order. Had the Test Ban Treaty outlawed all atomic weapons testing—it permitted underground tests—and had it included provisions for inspection, it would have gone a long way toward building a nonproliferation regime. For without the opportunity to test no country can reasonably expect to build a reliable weapon. Verification under the Test Ban Treaty was to be accomplished by "national means of detection" which suited the inveterate Soviet objection to inspection.

There were some signs of movement by the Soviets on the issue of inspection during this period. Shortly after the Cuban missile crisis the Soviet government reversed its previous position and unexpectedly agreed to support a US effort to extend to equipment those IAEA safeguards which heretofore had been limited to materials.<sup>12</sup> That the issue remained unresolved, however, was made evident when in the summer and fall of 1965 the two superpowers submitted their first drafts for a nonproliferation treaty. The US draft called for the application of IAEA "or equivalent international safeguards on all peaceful nuclear activities." In sharp contrast the Soviet text made no reference whatsoever to safeguards.<sup>13</sup>

It was not the issue of inspection or control, however, which delayed for several years the consummation of a treaty. The Soviets chose to use the issue of nuclear proliferation to attack West Germany, its relation to NATO and an American proposal for a NATO multilateral nuclear force (MLF). The MLF scheme was an ill-conceived US effort to create a nuclear force which would be

under the joint control of several NATO members, one of whom would be Germany. Since the United States would retain a veto over the use of these forces, no proliferation was involved. Soviet propaganda, nevertheless, pictured the plan as a means of putting the German finger on the bomb.<sup>14</sup> Ultimately, the Soviets won out, largely because the MLF issue became obsolete when both the United States and Germany lost interest in the plan.<sup>15</sup>

The last hurdle to be overcome before agreement could be reached on a nonproliferation treaty involved the problem of inspection. But somewhat ironically it was not Soviet objection to inspection, but rather its insistence on IAEA controls that created the difficulty. Reversing themselves completely, the Soviets now demanded that all signatories to the treaty be required to accept IAEA safeguards over all their peaceful nuclear activities. As in the MLF struggle, this position was directed against the Western powers, in this instance those countries belonging to Euratom. For almost 10 years, Euratom had satisfactorily inspected its members and they wanted to continue using Euratom as a mechanism of control. There was considerable logic to the Soviet contention, though it was also evident that the Soviet stance was initiated at least in part by the propagandistic opportunity it afforded to attack the Federal Republic. Ultimately, the Soviet position prevailed. The Non-Proliferation Treaty (NPT) was signed on July 1, 1968 and entered into force on March 5, 1970.

Under the terms of the NPT, the nuclear-weapon states undertake "not to transfer to any recipient whatsoever nuclear weapons . . . directly, or indirectly; and not in any way to assist . . . any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons. . . ."<sup>16</sup> "Each non-nuclear-weapon State . . . undertakes not to receive the transfer . . . of nuclear weapons . . . [and] not to manufacture or otherwise acquire nuclear weapons . . . ." The nonnuclear-weapons states who ratify the treaty must accept IAEA safeguards over all their nuclear activities to prevent "diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices." All parties agree that any fissionable fuel or equipment capable of manufacturing fissionable fuel given to a nonnuclear-weapons states must be subject to IAEA safeguards. As compensation to the nonnuclear weapons states, who assume the greater burden under this arrangement, the treaty provides for the "fullest possible exchange of equipment, materials and scientific and technological in-

formation for the peaceful uses of nuclear energy." Also, the "benefits from any peaceful application of nuclear explosions will be made available to nonnuclear-weapons states . . . on a non-discriminatory basis and that the charge . . . for the explosive devices used will be as low as possible . . . ." The nuclear weapons states commit themselves "to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date to the nuclear disarmament . . . ."

#### THE PROBLEMS OF A NONPROLIFERATION REGIME

This treaty is the legal basis for what is today referred to as a nonproliferation regime. One of the basic assumptions behind the concept of a legal regime is that nuclear proliferation can be stopped by persuading states to accept a legal obligation not to acquire or produce nuclear weapons. Nonproliferation is presumed to be (or on its way toward becoming) a norm of international law. Some Soviet and Western sources consider nonproliferation to be a rule of international law now.<sup>17</sup> Since states are not bound by rules which they do not accept, the fundamental strategy of a legal nonproliferation regime is to persuade all potential nuclear-weapons states to sign and ratify the NPT.

A nonproliferation regime can be established on bases other than law, on politics or technology for example. Political pressures might be suitable means to achieve the desired objective. Conceivably states can be coerced into denying themselves the proscribed bombs. Although, as we will discuss shortly, this has not been the principal Soviet approach, some aspects of Soviet behavior have suggested a political nonproliferation regime. The Kremlin has required all of the countries of the Eastern European Socialist bloc (including Rumania) not only to sign and ratify the NPT but to accept measures that would make extremely difficult their covertly acquiring the bomb.<sup>18</sup> A Soviet predilection toward the political approach was suggested in the early 1960's by V. S. Emelyanov, then Deputy Chairman of the Soviet Council of Ministers State Committee on the Utilization of Atomic Energy, who noted "Nonproliferation is no problem, each side takes care of his own."<sup>19</sup> Presumably the Western powers (to whom the remark was made) would control their clients as the Soviet Union was then doing. There are, of course, problems with coercion. How does one control nonaligned states such as India, Brazil, South

Africa or Israel? The Kremlin could not stop China from building the bomb nor compel Cuba to sign the NPT.

Coercion is not the only *political* approach to nonproliferation. Another tactic is to induce states to eschew nuclear arms by assuring them that their security interests can be met without recourse to such weapons. If nations feel secure, or if they are given a security guarantee by a nuclear-weapons state, then they might well be inclined to avoid the enormous expense of acquiring nuclear weapons (and their associated delivery systems). A feeble effort in this direction was attempted by the three nuclear weapons signatories in a United Nations Security Council resolution adopted on June 19, 1968. The Security Council, noting "the concern of certain . . . States that . . . appropriate measure be undertaken to safeguard their security" voted that "aggression against a non-nuclear-weapon State would create a situation in which the Security Council . . . would have to act immediately." It welcomed "the intention expressed by certain States [the United States, Great Britain and the Soviet Union] that they will provide or support immediate assistance . . . to any nonnuclear weapon State Party to the Treaty on the Non-Proliferation of Nuclear Weapons that is a victim of an act . . . in which nuclear weapons are used."<sup>20</sup> However inadequate this guarantee might be, it illustrates an attempt to deal with the problem of security. Undoubtedly a more useful guarantee would be a direct commitment from a superpower to a potential victim. Germany and Japan can afford to eschew nuclear arms because of the US nuclear umbrella. But such guarantees are rare, particularly from the Soviet Union. According to some sources, India in the 1960's unsuccessfully sought an explicit guarantee of support from the United States and the Soviet Union should she be threatened with nuclear blackmail by China.<sup>21</sup>

Technology control is yet another basis for creating a non-proliferation regime. The idea is to prevent nations from building the bomb by denying them the materials and technology necessary to do so. The NPT obligates parties not to acquire nuclear explosives, but it does not prohibit them from acquiring the means to do so. In a technical sense the NPT safeguards cannot stop a government from illegally diverting fissionable fuel used in nuclear reactors to military purposes. IAEA safeguards consist essentially of examination of records to verify accountability for materials. Periodically there are inspections of critical installations to be certain that the records accurately reflect what is going on. Should

these procedures reveal an unaccountable loss of fissionable fuel, all that the IAEA could do would be to warn the other NPT parties of the violation (a situation that has not yet occurred).

There are today three components of the nuclear fuel cycle which directly threaten to undermine efforts to impede nuclear proliferation. They are (1) uranium enrichment facilities which extract the fissionable isotope U-235 from natural uranium (U-238); (2) reprocessing plants which extract plutonium—also a fissionable fuel—from spent nuclear fuel; and (3) breeder reactors, a type of nuclear reactor which uses plutonium as a fuel and which in the course of its operations produces more fuel than it consumes. An essential tactic of technological control is to prevent a non-nuclear-weapon state from physically acquiring any of these types of facilities. Unfortunately for the advocates of this approach, several nonnuclear weapons countries (FRG, Netherlands, South Africa and Japan) already have or are planning to build an enrichment or a reprocessing plant.

Within recent years the United States has turned toward a technological solution to the problem of proliferation. Influenced by the findings of the Ford-Mitre report, the Carter administration has begun a vigorous effort to discourage worldwide the use of plutonium for peaceful purposes. This policy is reflected in the Nonproliferation Act of 1978. Although the Soviet Union does not condemn the concept of technological control, it does differ sharply with the United States over the question of using plutonium as an energy source. On the other hand, the Soviet Union has vigorously condemned the 1975 deal between the FRG and Brazil which will eventually give Brazil control over a complete fuel cycle including facilities for uranium enrichment.

The NPT has been in force now for almost a decade, long enough for the two superpowers to assess its prospects and limitations. It is clear that the Soviet Union is prepared to rely more heavily upon the safeguard provisions of the IAEA than is the United States. But there has been significant movement in the Soviet position during the decade. Three developments in the 1970's have profoundly affected Soviet policy: (1) the oil crisis of 1973; (2) the Indian nuclear explosion on May 18, 1974; and (3) the cultivation by France and Germany of a world market for reprocessing and enrichment facilities. Each of these developments has undermined the effort against proliferation.

The oil crisis stimulated global interest in atomic energy as an

alternative to fossile fuels. Worldwide that meant more nuclear reactors. In the Soviet Union the recognition of the vulnerability of industrialized economies to energy shortages only encouraged a tendency which had already existed to develop plutonium as a fuel. India's detonation of a fission device in the Rajasthan desert illustrated the inadequacy of a nonproliferation regime which failed to provide incentives for all the near-nuclear nations to sign the NPT. In addition to India, important nonsigners include Argentina, Brazil, Israel, Pakistan, South Africa and Spain. Particularly disconcerting to the Kremlin was the rash of announced sales of enrichment and reprocessing technologies by France and Germany. Since the mid-1970's, sales have been announced to Brazil, Iran,<sup>22</sup> South Africa, Pakistan and South Korea. The Kremlin could hardly fail to note that these sales were to countries whose foreign policies ranged from benign to anti-Soviet.

So while the Soviet Union was itself challenging the nonproliferation regime through its cultivation of plutonium, the Kremlin concomitantly wanted to close the loopholes leading to proliferation. Out of these diverse tendencies has emerged a policy, embodying each of the three approaches to a nonproliferation regime discussed above. The main elements of this policy can be summarized as follows:

- A demand for worldwide adherences to the NPT.
- Promotion of strict controls over nonsignatories of the NPT.
- Encouragement of the breeder reactor and a plutonium economy.

#### SOVIET SUPPORT FOR THE NPT

In its rhetoric the Soviet Union has strongly supported the NPT and urged universal adherence to it. In this sense, the heart of Soviet policy today is reliance upon a legal regime. A typical statement was made in *Pravda* in May 1976 when the United States and the Soviet Union extended the test ban treaty to include large underground tests.

As is known, power reactors produce plutonium, which can be used to create weapons of mass destruction. Therefore, the Treaty on the Nonproliferation of Nuclear Weapons . . . is an important instrument in averting the danger of

a nuclear war. . . . The nonproliferation treaty could play a still greater role if all states that have nuclear industries or facilities or intend to have them in the near future would sign it. However, today some states that possess significant military potential and have nuclear weapons or real possibilities for creating them are not treaty signatories. For this reason, it is necessary to take further steps to widen the circle of signatories.<sup>21</sup>

Precisely what these "further steps" might be has never been made clear, but the Soviet media has regularly demanded that all states sign and ratify the NPT. The Soviet press has been cautious about publicly condemning NPT hold-outs, usually avoiding naming Third World nations, though it is known to want India's accession very much. It has not, however, refrained from publicly criticizing those states in the "hostile camp." Chief among these objects of censure have been the Western European members of Euratom, South Africa and Israel. The slowness with which the five nonweapons Euratom states ratified the NPT obviously disturbed the Russians. When Germany, Italy, the Netherlands, Belgium and Luxemburg completed ratification in 1975, the obviously pleased Soviets described it as "an important event." But the issue remained as negotiations between the IAEA and Euratom over the implementation of IAEA safeguards dragged on for years. *Pravda* in May 1978 voiced its displeasure over the delay:

Circumstances exist . . . that impede the treaty's [NPT] becoming the universal instrument of an international policy of nonproliferation. The position of the nonnuclear member countries of the European Atomic Energy Community (EURATOM), in particular, gives cause for considerable concern. For a prolonged period of time now, they have been using all manner of delaying tactics to slow the practical implementation of effective inspection of its atomic industry by the Agency. In so doing, the representatives of EURATOM are gaining special privileges for themselves.<sup>22</sup>

These were bland criticisms compared to the invective unleashed against South Africa and Israel. "Israel's nuclear capabilities are no secret," *Izvestiia* complained in 1976, "and the Israeli militarists' craving for nuclear arms is widely known." "The RSA [Republic of South Africa] has not signed the Treaty of Nonproliferation of Nuclear Weapons, to which more than 100 states have now subscribed. . . . If nuclear weapons were to appear in the hands of the racist regime in Pretoria, this would create an immediate threat to the security of the African states . . . and would increase the nuclear threat to all mankind."<sup>23</sup> Not infrequently the

Soviet media refers to a "RSA-Israeli militarists alliance" supported by NATO, and demand their adherence to the NPT.

There is an interesting inconsistency between the stridency of Soviet propaganda against South Africa and Israel and its objective of securing full adherence to the NPT. If in fact the Kremlin did want South Africa and Israel to sign the NPT, then it would be expected to give some consideration to the security concerns of both states. An unremitting demonstration of hostility by the USSR would seem to be counterproductive, and yet that is exactly what the Kremlin has done. There is no record that the Soviets have made any concession to Israel or South African security needs that would encourage them to sign the NPT. To the contrary, in 1976 the Soviet bloc successfully urged the IAEA to permit the Palestine Liberation Organization (PLO) to participate as an observer in the IAEA general conference.<sup>26</sup> Since the PLO can hardly be considered a "near nuclear power" (which Israel is), this action strongly suggests that the goal of a nonproliferation regime is subordinate to Middle East policy.

One can observe a general Soviet insensitivity to the security concerns of the non-NPT signatories. On numerous occasions they have offered general assurances to come to the assistance of an NPT signatory which became the victim of aggression, though never have they gone beyond vague assurances. A general analysis of the proliferation problem in the journal *International Affairs* argued that the Security Council resolution of June 17, 1968 was "a major step toward providing security guarantees for the treaty's nonnuclear participants."<sup>27</sup> It is doubtful that many members of the United Nations—particularly the near-nuclear states—would find much comfort in that resolution. More recently the Soviet Union has again moved in that direction with the introduction before the General Assembly of a proposal for an international convention to guarantee the security for nonnuclear-weapons states.<sup>28</sup>

Those countries receiving Soviet nuclear assistance have been especially vulnerable to pressure to accede to the NPT, and the Kremlin has not been hesitant to use its influence. Moscow has taken pride in the fact that all of the Warsaw Pact countries are NPT signatories. Countries outside the Soviet bloc have generally been required to adhere as a condition for nuclear assistance. Libya, a recipient, signed under Soviet pressure, though she has yet to ratify. Finland, another recipient of Soviet aid, is a signatory. Two other beneficiaries of Soviet nuclear aid are nonsignatories

which nevertheless prove the general rule. Cuba, though outside the NPT, has agreed to put all of its reactors under IAEA inspection—a position that is functionally close to signing.<sup>29</sup> India, also outside the NPT, has been forced to accept stringent safeguards on the materials supplied by the Soviet Union. According to Gloria Duffy, Soviet pressure on India has been harder than anyone would have expected.<sup>30</sup> In general, there is little doubt that under existing conditions no member of the Soviet Eastern European bloc could construct a bomb; Soviet controls are too direct. With regard to Libya and Cuba the situation may be different. As noted above, IAEA safeguards are basically precautionary. Were Libya or Cuba to seize or overtly divert fissionable materials to military purposes, the Soviet Union might not be able to interfere.

India is a special case which illustrates an inconsistency in Soviet policy. There is no doubt but that the Soviets were unhappy with India's nuclear explosion in 1974 and since then have urged India to sign the NPT. But the Kremlin could never bring itself to condemn openly the Indian test in 1974, let alone resort to the invective unleashed against South Africa when that country was reported to be planning a nuclear test in 1977. The Tass announcement of the Indian blast reported only that it was a "peaceful explosion" carried out as part of a research program. A few days later Tass quoted Indian Prime Minister Indira Ghandi as saying that India would not produce an atomic weapon.<sup>31</sup> Of course the Soviets know better. They have all along recognized that peaceful nuclear explosives are the same as military explosives. Indeed, on occasion the Russians even admit that India does have the bomb.<sup>32</sup>

#### **DEMAND FOR STRICT CONTROLS OVER NONCONSIGNATORIES OF THE NPT**

In addition to promoting as wide a membership as possible in the NPT, the Soviet Union has been an energetic advocate of extending IAEA safeguards over the nuclear industries of countries which refuse to sign the NPT. Under the terms of the NPT the nuclear weapons states are obligated to ensure that IAEA safeguards are established over any facility that uses fissionable fuel which they provide. In August 1974 a group of nuclear exporting countries, including the Soviet Union, agreed on a list of nuclear materials and equipment (known as the Zanger list) whose delivery to any nonnuclear weapons country would entail the establishment of

IAEA safeguards. But there was a major weakness in this arrangement: the safeguards applied only to the particular installations in the recipient country which use the imported materials. The safeguards do not extend to all the nuclear facilities of the importing state.

This inadequacy in the NPT system was graphically exposed in June 1975 when West Germany and Brazil announced agreement on a multibillion dollar deal which included the sale of a complete nuclear fuel cycle. Over the course of several years, Brazil would receive eight large atomic power stations as well as installations for uranium enrichment and the extraction of plutonium through reprocessing spent fuel. Both the United States and the Soviet Union were disturbed by the agreement. It marked a major breakthrough in the transfer of enrichment and reprocessing technology which ultimately will give Brazil the capability to produce on short order fissionable fuel for nuclear weapons. Furthermore, Brazil has not signed the NPT. Moscow has bitterly condemned this "deal of the century." The Soviet press contends that it is a product of West German monopolies which are in quest of Brazil's abundant uranium reserves.<sup>33</sup> Soviet and American concern was further aroused with the agreement signed in March 1976 between France and Pakistan for the sale of a plant for processing irradiated nuclear fuel. Like Brazil, Pakistan is a nonsignatory of the NPT.<sup>34</sup>

Legally as a nonsigner of the NPT, France is not even obligated to impose IAEA controls over any equipment sent to a nonnuclear state. Germany, of course, is. France, however, has announced its intention to observe the safeguard provisions of the NPT as though she were a member. And its agreement with Pakistan did provide for control over the delivered equipment as did Germany's agreement with Brazil. These control provisions are entirely unsatisfactory to the Soviets. They want control to extend over the entire nuclear industries of both countries. "The Soviet Union," according to an authoritative spokesman, "would like to see all exporters of nuclear materials, equipment and technology abide, in their nuclear export policy, by the most stringent rules which help close completely any loopholes for the spread of nuclear weapons."<sup>35</sup> What the Soviets are seeking is known as "full-scope" IAEA controls.

Stimulated by concern over the threat of proliferation inherent in the growing international commerce in nuclear technology, the

leading nuclear export nations met (in secret) during 1975 and 1976 to formulate guidelines for the export of nuclear materials and equipment. Known as the Nuclear Suppliers Group (also as the London Club for the location of its first meetings), the original members included Canada, France, Great Britain, Japan, West Germany, the United States and the Soviet Union. Subsequently they were joined by Czechoslovakia, Belgium, East Germany, Italy, the Netherlands, Switzerland, Sweden and Poland. The early meetings of the group divided into two schools, one seeking a more rigorous set of rules for exporters than the other.<sup>16</sup> Great Britain and the Soviet Union were among those demanding the most stringent safeguards. A set of guidelines was finally agreed upon on September 21, 1977. These were further refined in January 1978 and transmitted to the IAEA for its approval. Under these guidelines the nuclear exporters have agreed to:

- Provide "formal governmental assurances" that the material or facilities will not be used to produce any nuclear explosive device, whether a weapon or a supposedly "peaceful" nuclear explosion.
- Place the material or facilities under "effective physical protection" to prevent theft or sabotage.
- Accept international inspection by the International Atomic Energy Agency of the material or facilities being imported and any similar items produced locally using the same type of design.
- Agree that the same rules will apply to any re-export or sale of imported nuclear materials to a third country.<sup>17</sup>

These guidelines do not include "full scope" safeguards which would cover all a recipient's nuclear facilities no matter how or when acquired. An article in *Pravda* pinpointed the weakness of the London guidelines from the Soviet perspective:

... the principles elaborated in London envisage IAEA control only over deliveries of nuclear materials which are implemented in conjunction with commitments on the part of the recipient countries that these materials will not be used to create weapons of mass destruction. But unfortunately, these principles do not demand that countries which are not parties to the non-proliferation treaty place all their nuclear activity under international control when importing materials, equipment and technology. In other words, nonnuclear countries can indirectly utilize the imported materials and

equipment in nuclear activity which has already been carried out and which is not under international control.

It is perfectly obvious that only complete control over all the nuclear activity of such countries can insure to the maximum extent a strict regime for the nonproliferation of the most dangerous weapons."

According to this critique, opposition to full-scope controls comes from "military-industrial circles of the Western states."

One solution would be for those countries which believe in full-scope safeguards to refrain from selling nuclear materials to any country not accepting them. That would, of course, widen the market for those sellers, like France, which are more promiscuous in their selling policies. Moscow is not so enthusiastic about demanding full-scope safeguards that it is prepared to adopt an embargo policy on its own. It continues to sell heavy water to the Indians for their reactors.

One of the central issues now facing nuclear exporters is whether or not to stop altogether the export of uranium enrichment and/or spent fuel reprocessing facilities, if it is not already too late to do so. France in December 1976 and Germany in June 1977 announced their intention not to export reprocessing plants in the future. Joseph Nye believes that this reflects a consensus among the Nuclear Suppliers Group.<sup>39</sup> The Soviets have not taken an absolute position against the transfer of this technology, though they obviously have deep reservations about the wisdom of engaging in this trade. A recent commentary noted:

The trend in some nonnuclear countries, including those which are at the initial stage in the development of their atomic power industry, to build up an industry for uranium enrichment and the processing of irradiated fuel with plutonium extraction may be fraught with danger in terms of nuclear weapons proliferation. Let us bear in mind that even the most developed states have just started using plutonium as a secondary fuel, which is why the keenness of some nonnuclear states to obtain plants for processing heat-generating elements must evoke legitimate questions and even serious concern.<sup>40</sup>

Looking at Soviet behavior one sees that Moscow's practice here corresponds closely with its rhetoric: the Soviet Union goes to considerable length to prevent any of the recipients of its technology from obtaining physical control over those materials and facilities which could undermine a nonproliferation regime. Countries which have ordered or received reactors from the Soviet

Union are Bulgaria, Cuba, Czechoslovakia, Finland, East Germany, Hungary, Libya, Poland and Rumania. The reactor exported by the Soviet Union is a light water reactor which is the kind least suited to the production of plutonium. On-line refueling is not possible with light-water reactors. In order to refuel or extract *irradiated fuel from a light-water reactor*, the installation must first be shut down. This would give the IAEA (and the USSR) ample warning of a diversion attempt.

Nor do the Soviets permit any of the COMECON countries to possess uranium enrichment or reprocessing facilities. All natural uranium in Eastern Europe is sent to the Soviet Union for enrichment. The fuel once used is transferred back to the Soviet Union where it is reprocessed and the waste is stored. In practice Moscow is observing the rule "each one takes care of his own" when it comes to restricting the shipment of dangerous technology abroad.

#### ENCOURAGEMENT OF THE BREEDER-REACTOR AND PLUTONIUM ECONOMY

Currently there is no proliferation issue on which the United States and the Soviet Union disagree so completely as that involving the use of plutonium for peaceful purposes. Complicating the problem for the United States is the fact that Western Europe and Japan side with the USSR on this issue. Since early in the atomic age the Soviets have been enthusiastic and optimistic crusaders for the application of atomic energy for peaceful uses, particularly electricity. They claim the world's first atomic power station which began operations on June 27, 1954 in the city of Obinsk. Even before the oil crisis of the 1970's, V. S. Emelyanov, Deputy Chairman of the State Committee on the Utilization of Atomic Energy, argued that "the world enters a new era in which basic energy will be derived from nuclear processes."<sup>11</sup> Prophetically his article was entitled "Nuclear Reactors Will Spread." In the 1960's the Soviets saw atomic energy as the answer to the uneven distribution of organic fuels in their country, a result of the lack of oil, coal or natural gas in vast regions west of the Ural Mountains. A decade later their views were further enhanced by the specter of a global depletion of oil and gas.

Atomic energy has several advantages over fossil fuels. The Soviets have calculated that nuclear power will reduce the unit cost

of electricity by eliminating the enormous transportation costs of organic fuels. Nuclear power is ecologically preferable; it does not pollute the atmosphere or harm the environment. Furthermore, the Soviet Union has always maintained that peaceful nuclear facilities are safe. In spite of the evidence provided by Zhores Medvedev to the contrary, Moscow denies that any dangerous accidents have ever occurred.<sup>42</sup> (Only very recently have Soviet officials publicly raised questions concerning the potential ecological damage of nuclear power installations.<sup>43</sup>) The clinching argument for atomic energy, however, is the availability of fuel. As one correspondent in *Pravda* summed it up: "An atomic station with a capacity of 1 million kilowatts consumes 30 tons of slightly enriched uranium a year. About 2.5 million tons of coal are needed to operate a thermal station of this size. By putting into full operation the reactors commissioned during the current 5-year plan [the 10th] we will save approximately 45 million tons of fuel a year by 1980."<sup>44</sup>

But uranium too is a finite fuel, and it is this consideration which drives Moscow (and many other countries with far less energy sources than the Soviet Union) to plutonium and the breeder reactor. Assessments differ in estimating the amount of uranium available to the Soviet Union. Itself a major producer of uranium, the Soviet Union also has exclusive rights to Czechoslovak uranium, which ranks among the world's largest deposits. Hungary and Bulgaria produce small quantities for export to their larger neighbor. One source reports that as of 1977 the Soviets had built up a stockpile estimated at 200,000 tons.<sup>45</sup> Notwithstanding these reserves, the Kremlin apparently fears a long-term shortage. Academician A. Aleksandrov last April wrote that "According to estimates, the planet has about 4 million tons of relatively cheap uranium suitable for power engineering purposes—that's not so very much . . . it turns out that, all told, there is no more of this relatively cheap uranium than there is of petroleum."<sup>46</sup> Breeder reactors theoretically can expand the power produced by a given amount of uranium by as much as 100. Because the liquid-metal fast breeder produces more fuel than it uses, a US report describes it as "a virtually inexhaustible resource for generating electricity."<sup>47</sup> Apparently the Soviets share this optimistic assessment.

Research in the Soviet Union on fast-breeder reactors began in 1949. By the early 1960's development had reached the point where work was begun on the first breeder reactor. A relatively small reactor began operations in Dmitrovgrad in Ulyanovsk Province in

the late 1960's. The Soviet Union built the world's first large fast-breeder reactor, with a capacity of 350,000 kilowatts, at Shevchenko in the Transcaspian region of Kazakhstan. It began operation in 1973.<sup>44</sup> Throughout this decade Soviet scientists have maintained great expectations for the fast-breeder. As early as 1970 A. Petrosyants, Chairman of the State Committee for the Utilization of Atomic Energy, wrote "Construction of atomic plants on the basis of 'fast' reactors [breeders] is the general trend in the further development of atomic-power engineering in our country."<sup>45</sup> Almost a decade later Soviet scientists continued to affirm that "at present the most promising branch of atomic power engineering appears to be that which is connected with fast-neutron reactors. . . ."<sup>46</sup> This statement expresses intentions, not accomplishments. In fact, nuclear energy in the Soviet Union has developed much more slowly than intended. Under the current 5-year plan approximately 20 percent of new capacity for energy is scheduled to be nuclear. Even at that, in 1980 nuclear power will account for only one percent of total energy production.<sup>47</sup> But their commitment to the fast-breeder is clear.

There has been virtually no discussion in the Soviet press about the relationship between the widespread use of breeder reactors and the effort to curb the spread of nuclear weapons. In a rare admission this year *Pravda* acknowledged that breeder reactors pose "difficulties," the chief of which

... is that the operation of such reactors results in the expanded reproduction of plutonium, the basis of nuclear weapons.

The development of world power engineering on such a basis would put many hundreds of tons of plutonium into international circulation. The possibility of its 'leakage' that arises in this connection clearly runs contrary to the interests of security and the prevention of nuclear war.<sup>48</sup>

On this issue the Soviets continue to attempt to square the circle. They want a plutonium economy and they want a nonproliferation regime. At this stage they appear willing, unlike the United States, to undermine the latter in order to promote the former. Like the French with whom they negotiated an agreement in 1977 to cooperate in breeder research, the Soviets are giving priority to their energy needs.

On balance, then, current Soviet policy supports a non-proliferation regime on some counts—support for the NPT in-

cluding vigorous IAEA controls, full-scope safeguards over non-NPT signatories who receive nuclear aid, curtailing the export of enrichment and reprocessing facilities—but undermines it in other areas, most notably in the development of the fast-breeder reactor. There are other facets of Soviet policy which we have not considered here which undermine the nonproliferation efforts: Soviet support for peaceful nuclear explosions and the sale of nuclear technology to politically volatile and extremist regimes like Libya. Indeed, the growing Soviet involvement in the commerce of nuclear materials and services threatens to encourage the spread of nuclear capabilities. The time is rapidly approaching when the Soviet Union—in concert with other nuclear powers—is going to have to give an even higher priority to nonproliferation as a foreign policy objective or alternatively to develop a strategy for living in a highly proliferated world.

#### ENDNOTES

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10. Duffy, p. 85.
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12. Bertrand Goldschmidt, "A Historical Survey of Nonproliferation Policies," *International Security*, Summer 1972, p. 75.
13. US Arms Control and Disarmament Agency, *Documents on Disarmament 1965*, Washington: US Government Printing Office, December 1966, pp. 346-349 for the US proposal and pp. 443-446 for the Soviet proposal.
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20. *Documents on Disarmament, 1968*, p. 444.
21. Frank T. J. Bray and Michael L. Moodie, "Nuclear Politics in India," *Survival*, Vol. XX, No. 3, May/June 1977, p. 112.

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38. I. Dmitriyev, "To Create a Reliable Barrier," *Pravda*, July 8, 1977, *FBIS*, July 12, 1977, Vol. III, No. 133.

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40. R. Zhelezov, p. 51. Recognizing that the demand for enrichment and reprocessing facilities will likely increase in the future, particularly among the developing countries, the Soviet Union has suggested the creation of multinational regional centers for these facilities. Presumably the existing nuclear-weapons states would be the location of facilities serving regional centers. See I. Dmitriyev, "The Atomic Energy for Peaceful Purposes," *Pravda*, May 30, 1976, *FBIS*, June 2, 1976, Vol. III, No. 107.

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that like many Western powers (not including the United States), the Soviet Union is prepared to sacrifice nonproliferation to meet its anticipated energy needs.

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